



SEISMOLOGICAL SOCIETY *of* AMERICA

201 PLAZA PROFESSIONAL BUILDING, EL CERRITO, CALIFORNIA 94530  
TEL: (510) 525-5474 • FAX: (510) 525-7204 • [HTTP://WWW.SEIMOSOC.ORG](http://www.seismosoc.org)

January 9, 2012

## **SSA Response to OSTP Request for Information: Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research**

The Seismological Society of America (SSA) appreciates the opportunity to respond to OSTP's November 3, 2011 Federal Register notice requesting comments on "Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research."

SSA is a scientific society devoted to the advancement of seismology and its applications in understanding and mitigating earthquake hazards. Founded in 1906 in San Francisco, the Society now has approximately 2,000 members from 70 countries representing a variety of technical interests: seismologists and other geophysicists, geologists, engineers, insurers, and policymakers in preparedness and safety. SSA is a non-profit corporation and is exempt from federal taxes under section 501(c)(3) of the Internal Revenue Code.

SSA publishes two peer reviewed journals: The Bulletin of the Seismological Society of America (BSSA), which has been the premier journal in earthquake seismology since 1911, and Seismological Research Letters (SRL), a more general forum for informal communication among seismologists, as well as between seismologists and those non-specialists interested in seismology and related disciplines.

Society publishers add significant value to the research papers submitted to our journals through rigorous peer review, quality control, and other activities in the publication process. We copyright the published article that represents that value-added product. If we cannot recover our costs in some way this important validation of research would be lost or would have to be supported by government funding elsewhere.

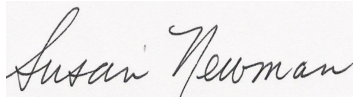
While scientific societies can provide quality control at much lower cost than any other organization, our investments in technology have been substantial for a small society. That is what is required to make content successfully searchable and useful.

At SSA, we have worked hard to make all of our content publicly available on the internet for a reasonable price. We participate in the non-profit consortium, GeoScienceWorld (GSW). We include access to back files of BSSA from 1911 in our member and library subscriptions for very modest subscription rates. In SRL there is a substantial amount of free content. Our pay-for-view fees for individual articles in both journals are low.

We support the statement submitted by GeoScienceWorld including their endorsement of the answers to specific questions posed in this Request provided by the Association of Learned and Professional Society Publishers (ALPSP), which we have included below for reference.

Thank you again for this opportunity to comment.

Sincerely,



Susan Newman  
Executive Director  
Seismological Society of America

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## **From GeoScienceWorld**

### About GeoScienceWorld (GSW)

GeoScienceWorld is a nonprofit collaborative of 26 global scholarly earth science organizations developed to provide and sustain an expanding platform of 40 digital journals, integrated with the GeoRef index, developed by the American Geosciences Institute, which is the leading abstracting and indexing service for geoscience content. GSW's mission is to improve affordable access to earth science scholarship globally. GSW works with many U.S. and non-U.S. research societies to deliver research content affordably to users in 40 countries worldwide.

### Public Discovery of and Access to Research in GSW

GSW content hosted in connection with a vast number of contextually-relevant digital resources. We invest in making the research we host discoverable via numerous public channels at no charge to users. GSW and its partners create full-text abstracts, PDF previews, digital object identifiers, and metadata for all articles and abstracts, which are available through public channels, including Google, Google Scholar, CrossRef, GeoRef, and others, to expose the content for maximum discovery and use.

All GSW-hosted journals are indexed in AGI's GeoRef. This facilitating step enables live linking to and from our content to millions of relevant, copyrighted and public/open materials hosted elsewhere on the Web. For users seeking access to more than contextual browsing, abstracts, and page previews, the vast majority of our current and archival full-text articles are

publicly available at nominal pay-per-use prices. The GSW platform does not solicit advertising to subsidize its delivery efforts.

#### Facilitating Investment

GSW makes significant and ongoing investments in technologies that improve the user experience, which, increasingly, are tailored to the specific requirements of researchers in our domain. An example is our recent investment in geographic search capabilities, made possible by latitude and longitude coordinates assigned to our articles in metadata. These services are invaluable to users in geo-scientific disciplines but would not be relevant to research journals across other disciplines.

Because we recognize that research access is made better through the development of services, which incorporate an understanding of the science and needs of our specific users, GSW developed a network of research societies that add expertise to scholarly research with negotiated discounts, shared services, and effective cost controls that enable us to serve our distribution missions. This was one of the founding aims of the organization in 2004.

Our content is hosted at Stanford University. As we move forward, we also plan to take make investments that enable us to archive our content in secure digital repository systems such as CLOCKSS and/or Portico, which will ensure that our materials are secure and accessible in perpetuity.

#### GSW's Position on Open Access

Our mission is fundamentally concerned with providing affordable, digital access to high-quality, vetted research materials within a domain-specific context. We recognize that this is essential to supporting knowledge transfer between researchers around the world.

Despite our alignment with certain open access principles, GSW does not see a necessity for widespread government intervention or a one-size-fits-all solution mandating no-charge access to the published outcomes of public-supported research. We do believe that publicly-funded research can and should be made available to all through open Web-based discovery tools along with free abstracts and previews. We also believe that it would be appropriate to require publishers to make individual journal articles available to the public at rental and on-demand printing prices that are easily and broadly affordable. In fact, as per the responses below, we see the marketplace for digital scholarly information already evolving to realize these objectives. Given the multiple emerging models for delivery, which include article rentals, purchases, and fair-use sharing, we see no reason that publicly-funded research cannot be made available for individual, dead-based access at low per-article prices.

We are not a profit-seeking organization, so our position is not motivated by commercial interests. However, we are committed to supporting the resilience of nonprofit scientific societies, which may be seriously jeopardized by sweeping mandates for "free" access.

Enormous amount of investment and industry occur behind the scenes in digital scholarly publishing after an article is submitted for publication. While research endeavors may be publicly funded, the processes of developing research articles and including them in accessible, high-value databases (not only through editorial steps but through tagging, hosting, and service extensions) are internally supported -- and yet cannot be entirely divorced from the content which requires their existence. Requiring free delivery may under-value the requirements that contribute to useful, future-proofed delivery in a rapidly-evolving industry.

GSW does not believe that the publishing process will be equivalently supported, in terms of continuity and quality, by models that prohibit charging end-users or their sponsors for access. We also do not envision that one broad solution will recognize the specific requirements of scholarly works, which vary considerably by specialization.

In response to the specific questions posed in this Request for Information on Public Access to Peer-Reviewed Scholarly Publications Resulting from Federally Funded Research, GSW seconds the responses of the Association of Learned and Professional Society Publishers (ALPSP), which we have included below for reference.

Sincerely,

Alexandra Vance  
Executive Director  
GeoScienceWorld  
4220 King Street  
Alexandria, VA USA

From ALPSP:

Scholarly publishing is an international enterprise, with around 1.5 million articles published annually<sup>1</sup>. US researchers dominate this output with a 29% share of the total. The majority of publishers (95%) are small, publishing one or two journals. At the other end of the scale, the 100 largest publishers account for 67% of the total number of journals.

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<sup>1</sup> <http://www.stm-assoc.org/industry-statistics/the-stm-report/>

Publishers are dedicated to providing the widest dissemination of the peer-reviewed results of research and to supporting the scientific enterprise. In addition to investing heavily in staff and technology, not-for-profit learned and professional society publishers redirect their 'surplus' back into the community through organization of conferences, scholarly awards, teaching fellowships, skills transfer through workshops and seminars, enhancing professional standards and benchmarking, travel and other grants. Commercial publishers also invest directly in the scientific community, through grants, awards and other sponsorship schemes.

Publishers support any sustainable models of access, the most common being the subscription-based model. Gold Open Access, where the author (via the institution or funder) provides payment to fund publication, is gaining popularity, though it should be noted that this is not a fully tested model with regard to long-term sustainability. Publishers are working with funding organizations to investigate the issues surrounding this new access model to ensure it can provide sustainable business models for publishers to continue to disseminate value-added peer-reviewed literature.

Policies which require open access publication but do not provide funding for that publication, such as Green Open Access (author self-archiving in openly accessible repositories) threatens to undermine the publication system on which it depends, as evidenced in a recent report from the Research Information Network<sup>2</sup>. The PEER project<sup>3</sup> in Europe has been investigating the effects of large-scale, systematic deposit of the Accepted Manuscript (see NISO/ALPSP definitions for Journal Article Versions<sup>4</sup>) in repositories. This project is a rational approach towards defining the problems and thereby identifying potential solutions. It is a broad ranging project encompassing economic, behavioral and usage aspects. The behavioral study has reported and noted that authors value highly peer-reviewed journals and whilst there is still some confusion regarding open access publishing, there were reservations about peer-reviewed papers being held in open-access repositories. It also found that readers were unlikely to go to a repository to search for journal articles.

**(1) Are there steps that agencies could take to grow existing and new markets related to the access and analysis of peer-reviewed publications that result from federally funded scientific research? How can policies for archiving publications and making them publically accessible be used to grow the economy and improve the productivity of the scientific enterprise? What are the relative costs and benefits of such policies? What type of access to these publications is required to maximize U.S. economic growth and improve the productivity of the American scientific enterprise?**

1. Current markets for peer-reviewed publications exist globally and publishers have invested heavily to ensure that there are many channels of access to publications. The markets are already well-served and a recent survey from the Publishing Research Consortium found that 97% of researchers in North America have very or fairly easy access to research journals<sup>5</sup>. This study also

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<sup>2</sup> <http://www.rin.ac.uk/news/press/heading-open-road-costs-and-benefits-transitions-scholarly-communications>

<sup>3</sup> <http://www.peerproject.eu/>

<sup>4</sup> <http://www.niso.org/publications/rp/> NISO RP-8-2008 Journal Article Versions (JAV): Recommendations of the NISO/ALPSP JAV Technical Working Group

<sup>5</sup> <http://www.publishingresearch.net/projects.htm> Access vs. Importance

demonstrated that North America enjoys one of the best 'access to information' versus 'importance of that information', profiles of any of the regions investigated.

2. Publishers have recognized the needs of the myriad communities they serve and have responded appropriately, leading the way with technical tools and services to enhance the access, usability and analysis of published research, collaborating widely with various stakeholders in the process.
3. In this regard, a number of publisher-led initiatives have increased access to many different user groups. For example, DeepDyve<sup>6</sup>, an article rental system, enables anyone to access thousands of scholarly and academic journals. Users may browse an article online and subsequently purchase the article for download if desired. patientINFORM<sup>7</sup> brings up-to-date, authoritative information from the world's leading medical journals to patients and caregivers. Information is provided in a summarized form, with links to free or reduced-price access to the full article on the publisher website. The Emergency Access Initiative<sup>8</sup> is a partnership between the Association of American Publishers (plus other publishers), the National Library of Medicine and the National Network of Libraries of Medicine with the aim of providing temporary and free access to those affected by disasters and those providing assistance to them. It includes public access.
4. In addition to the collaborations in paragraph 12, publishers also provide free or very low cost access to universities and colleges, research institutes, schools, hospitals, governmental offices and national libraries in the lowest gross national income per capita countries throughout the world through the Research4Life<sup>9</sup>, eIFL<sup>10</sup> and PERii<sup>11</sup> initiatives, amongst others.
5. It is clear that publishers are keen to ensure that the needs of different markets in accessing scholarly information are met appropriately and are keen to do so in collaboration with other stakeholders. Publishers are keen to engage with the US Government to address the further gaps it has identified in public access. It would be useful for agencies to detail the particular needs of such user groups and to collaborate with publishers to establish the most efficient and appropriate ways in which to address those needs.
6. The need for archiving digital information has been recognized by publishers, librarians, funders and researchers. Collaborative projects already exist to ensure the long term preservation of scholarly information through initiatives such as Portico<sup>12</sup>, LOCKSS<sup>13</sup>, CLOCKSS<sup>14</sup> and the National Library of the Netherlands (Koninklijke Bibliotheek) eDepot<sup>15</sup>.

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<sup>6</sup> <http://www.deepdyve.com/>

<sup>7</sup> <http://www.patientinform.org/>

<sup>8</sup> <http://eai.nlm.nih.gov/docs/captcha/test.pl?url=>

<sup>9</sup> <http://www.research4life.org/>

<sup>10</sup> <http://www.eifl.net/>

<sup>11</sup> <http://www.inasp.info/>

<sup>12</sup> <http://www.portico.org/digital-preservation/>

<sup>13</sup> <http://www.lockss.org/lockss/Home>

<sup>14</sup> <http://www.clockss.org/clockss/Home>

<sup>15</sup> <http://www.kb.nl/index-en.html>

7. Very careful consideration needs to be given to archiving and public access policies, if these are to be tied to growth in the US economy and improving output of the US scientific enterprise. Public access cannot be restricted to one local region. Ensuring public access to publications resulting from federally-funded research will result in global access, therefore benefiting researchers and other users all over the world (and potentially also their economies), not just the US. This removes any competitive advantage for the US economy and research output.
8. The National Institute of Health has noted that more than half of all PubMedCentral users are from outside the US. This repository is therefore reducing the export market for the US publishing industry which, in total, employs around 50,000 people and contributes c. US\$3.5 billion to the US balance of trade.

**(2) What specific steps can be taken to protect the intellectual property interests of publishers, scientists, Federal agencies, and other stakeholders involved with the publication and dissemination of peer-reviewed scholarly publications resulting from federally funded scientific research? Conversely, are there policies that should not be adopted with respect to public access to peer-reviewed scholarly publications so as not to undermine any intellectual property rights of publishers, scientists, Federal agencies, and other stakeholders?**

9. The US government is clearly aware that allowing global public access to the peer-reviewed published output from federally-funded research has the potential to open such content to piracy and other unauthorized dissemination.
10. Such piracy undermines the income that scholarly publishers require to continue their investment in the aforementioned projects, tools and collaborations for the benefit of the scholarly community.
11. The most efficient way to ensure appropriate protection of intellectual property interests of all stakeholders would be to make the final Research Report freely available. This would allow a rapid and very broad dissemination of the research results obtained directly from federal funding. This would also facilitate such reporting to be tied back to the original grant made by the federal agency. Final project reports could also be linked to the peer-reviewed published research, available online whether free, via rental or for full purchase as the publisher business model dictates.
12. GSW is not in favor of mandated deposit to centralized open repositories. In addition to significant concerns about long-term sustainability and piracy, open repositories have deleterious effects on the publishing model; for example, NIH does not currently provide publishers with full, detailed usage statistics from PubMed Central, which means publishers are unable to supply libraries with the complete picture with regard to their institution's use of a wide range of journals. Such usage data is crucial in determining renewals and whilst this situation persists, subscriptions are being cancelled based on incomplete usage data.

**(3) What are the pros and cons of centralized and decentralized approaches to managing public access to peer-reviewed scholarly publications that result from federally funded research in terms of interoperability, search, development of analytic tools, and other scientific and commercial opportunities? Are there reasons why a Federal agency (or agencies) should maintain custody of all published content, and are there ways that the government can ensure long-term stewardship if content is distributed across multiple private sources?**

13. Studies have demonstrated that researchers prefer to access the publisher-created Version of Record (VoR) from a peer-reviewed journal as the authoritative, definitive version, over versions in subject or institutional repositories<sup>16, 17</sup>.
14. In an interconnected age, with current and ever-improving technology, centralization is not required and moreover, requires unnecessary duplication of effort at considerable expense. Indeed the report from the Scholarly Publishing Roundtable in January 2010<sup>18</sup> recommended decentralization to achieve the interoperability needed to “enhance the impact of the scholarly literature and ignite the generation of new knowledge”.
15. Publishers have gone to considerable lengths in developing tools to ensure interoperability between different access systems. For example the Digital Object Identifier (DOI<sup>19</sup>) system, to provide persistent identification of digital objects, the CrossRef<sup>20</sup> organization and its various ongoing projects aimed at connecting users with primary research content and the Open Research and Contributor ID (ORCID<sup>21</sup>) initiative, to solve author name ambiguity in scholarly communications and latterly resolving institutional naming ambiguity.
16. Publishers are also continuing to invest in the development of discipline-specific tools to enable users to interact with and analyze specialized content. Such tools would be lost with centralization.
17. Publishers are continuing to invest in metadata standards, which improve the ease with which relevant articles can be discovered. With such excellent standards, search tools are all that is required to connect users with the most appropriate content for their needs, and importantly to the VoR. Such metadata standards include those developed by EDItEUR<sup>22</sup>, IDEAlliance (PRISM)<sup>23</sup> and NISO<sup>24</sup> (see also paragraphs 33 and 34 below).

**(4) Are there models or new ideas for public-private partnerships that take advantage of existing publisher archives and encourage innovation in**

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<sup>16</sup> <http://www.peerproject.eu/reports/> D4.2 PEER Behavioural Research – Final Report

<sup>17</sup> <http://www.publishingresearch.net/projects.htm> Research Publication Characteristics and Their Relative Values

<sup>18</sup> <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>

<sup>19</sup> <http://www.doi.org>

<sup>20</sup> <http://www.crossref.org>

<sup>21</sup> <http://orcid.org>

<sup>22</sup> <http://www.editeur.org/>

<sup>23</sup> <http://www.idealliance.org/specifications/prism/>

<sup>24</sup> <http://www.niso.org/standards/>

**accessibility and interoperability, while ensuring long-term stewardship of the results of federally funded research?**

18. In addition to the many public-private partnerships already mentioned, publishers are keen to engage further with Government and its agencies. Proposals have already been put to NSF for collaborative projects to enhance the public access, utility and preservation of publications resulting from federally-funded research.
19. Such proposals include standardizing the collection, display and use of metadata to indicate the federal grant supporting the research from which a scholarly publication derived and potential linking back to the Federal Agency website. A further example is the proposal for a project to understand the requirements for and benefits derived from content mining and to establish a methodology for overcoming current barriers, such that publishers can facilitate such content mining with sustainable business models.
20. These are just two of the proposals under discussion with the NSF.

**(5) What steps can be taken by Federal agencies, publishers, and/or scholarly and professional societies to encourage interoperable search, discovery, and analysis capacity across disciplines and archives? What are the minimum core metadata for scholarly publications that must be made available to the public to allow such capabilities? How should Federal agencies make certain that such minimum core metadata associated with peer-reviewed publications resulting from federally funded scientific research are publicly available to ensure that these publications can be easily found and linked to Federal science funding?**

21. As already mentioned above (paragraph 27), publishers are already undertaking a project with CrossRef and the Department of Energy (DoE) to standardize the way funding information is collected publishers and included in article metadata. This would enable Federal agencies to easily obtain information about publications resulting from federally-funded research.
22. Such collaborative projects enable cost-effective standardization across all Federal agencies and publishers.
23. Metadata allows users to discover information and find related information without the requirement of accessing the full text. Two initiatives are important in this regard.
24. The Dublin Core Metadata Initiative<sup>25</sup> provides key specifications and best practice regarding the use of metadata for the description of various digital resources (including books and journal articles). It enables interoperability of different applications and vocabularies and optimizes the metadata for searching.
25. CrossRef<sup>20</sup> provides a cross-publisher linking network. This allows readers to easily link to other resources of interest on other publisher platforms. This

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<sup>25</sup> <http://dublincore.org/>

works seamlessly through DOIs and metadata which are embedded in articles and other content as part of the value-added publication process.

**(6) How can Federal agencies that fund science maximize the benefit of public access policies to U.S. taxpayers, and their investment in the peer-reviewed literature, while minimizing burden and costs for stakeholders, including awardee institutions, scientists, publishers, Federal agencies, and libraries?**

26. Federal agencies funding scientific research should maximize the products that they invest in, that is the research reports required by Federal agencies from the research scientist. Some already make such research reports available (e.g. the DoE Information Bridge<sup>26</sup>), but others do not. Making all such reports freely available would solve the "public access" issue.
27. Federal agencies do not invest in peer-reviewed journals. Publishers add significant value to peer-reviewed publications and this is reflected in researcher preference for the VoR<sup>16,17</sup>. Publishers should then be at liberty to employ appropriate business models by which they may recover their investment and to reinvest.

**(7) Besides scholarly journal articles, should other types of peer-reviewed publications resulting from federally funded research, such as book chapters and conference proceedings, be covered by these public access policies?**

28. No. Publishers invest considerably in all types of content they produce to add value to the scholarly and academic community that utilize them. Such publications should not be appropriated without rightsholder permission and compensation. To behave otherwise would compromise the sustainability of high quality publication, dissemination and preservation of the research results.

**(8) What is the appropriate embargo period after publication before the public is granted free access to the full content of peer-reviewed scholarly publications resulting from federally funded research? Please describe the empirical basis for the recommended embargo period. Analyses that weigh public and private benefits and account for external market factors, such as competition, price changes, library budgets, and other factors, will be particularly useful. Are there evidence-based arguments that can be made that the delay period should be different for specific disciplines or types of publications?**

29. There is no single "appropriate" embargo period. Federal agencies should not impose inappropriate embargo periods on non-federally funded businesses. Individual publisher business models are not arbitrary, but are carefully calibrated to meet the needs of the market.
30. The most common current embargoes range from zero, for gold Open Access material, to 12 months, as a result of the NIH-mandate. Publishers, however, should be able to set their own appropriate embargo, depending on the material

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<sup>26</sup> <http://www.osti.gov/bridge/>

they publish and the market for which they publish, and this may be more or less than 12 months.

31. An indication of the length of usage an article in a given discipline received, the journal half-life forms a useful measure. For example, the American Physiological Society reports journal half-life from 4.3 to over 10 years<sup>27</sup>.
32. Imposing mandates on the potential to recover investment from such usage further undermines publishers' ability to continue to innovate and add value for the benefit of the scholarly and academic community.
33. In the current economic climate, recovering investment is all too important. Journal budgets are being squeezed and foreshortening the length of time a publisher is able to recoup their investment has the potential to seriously damage publishers and therefore the overall economy.
34. As already referred to, the lack of transparency demonstrated by NIH has the potential to undermining the entire system. Librarians utilize usage statistics as part of their considerations for journal renewals. Whilst publishers have worked with NIH to assist authors in fulfilling their mandated deposit, NIH has been unwilling to provide publishers with usage statistics, which would allow publishers to provide a more accurate picture to librarians of the usage of journals by their faculty.

**Please identify any other items the Task Force might consider for Federal policies related to public access to peer-reviewed scholarly publications resulting from federally supported research.**

35. Scientific research and scholarly communication is an international enterprise. Any efforts to improve "public" access through collaborations, standards or other projects, should necessarily be considered on an international, rather than national scale, if the real benefits of improving access to data are to be efficiently and cost-effectively recognized.
36. Publishers are very willing to enter into collaborative projects to explore the nature of these issues with the aim of producing the most cost-effective and appropriate solutions for both federal agencies and end users.

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<sup>27</sup> [http://www.the-aps.org/publications/journals/info/impact\\_factors.htm](http://www.the-aps.org/publications/journals/info/impact_factors.htm)